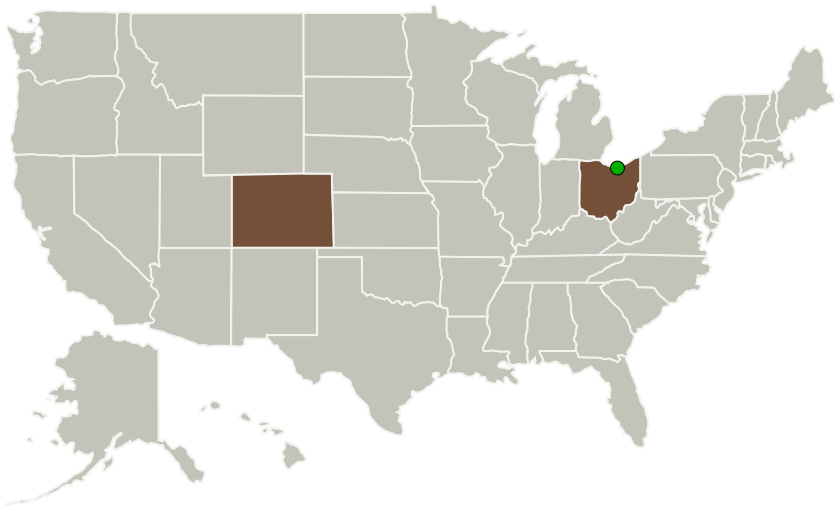
Additive Manufacturing of Ion Thruster Optics, Phase II

Completed Technology Project (2015 - 2017)

Project Introduction

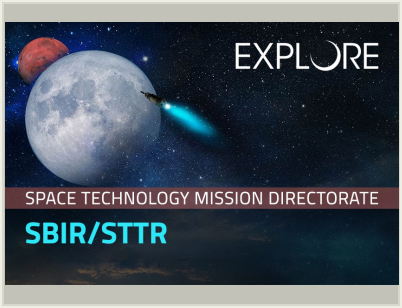
Plasma Controls will manufacture and test several sets of ion optics for electric propulsion ion thrusters using additive manufacturing technology, also known as 3D printing. Additive manufacturing can potentially produce optics with novel or complex geometry that have better performance compared to those made traditionally, while also giving cost and mass savings.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Plasma Controls, LLC	Lead Organization	Industry	Fort Collins, Colorado
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations	
Colorado	Ohio



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Project Transitions

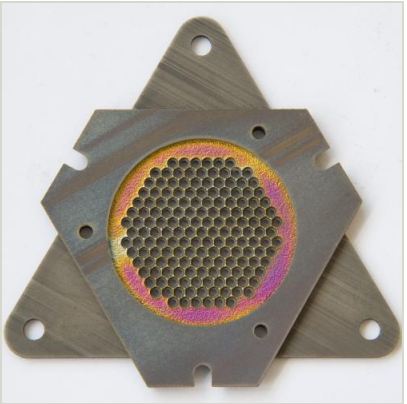
May 2015: Project Start

June 2017: Closed out

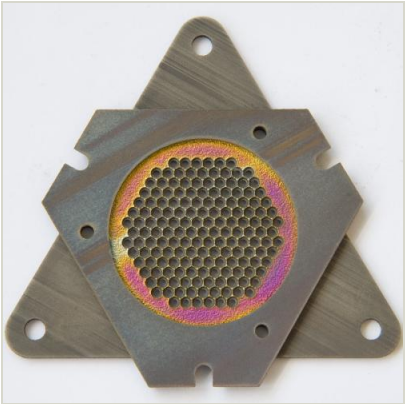
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137740)*

Images



Briefing Chart
Additive Manufacturing of Ion Thruster Optics Briefing Chart *(https://techport.nasa.gov/image/126408)*



Final Summary Chart Image
Additive Manufacturing of Ion Thruster Optics, Phase II Project Image *(https://techport.nasa.gov/image/134904)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Plasma Controls, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

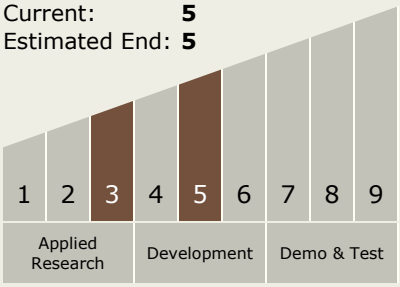
Carlos Torrez

Principal Investigator:

Cody C Farnell

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Completed Technology Project (2015 - 2017)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.2 Electric Space Propulsion
    - TX01.2.2 Electrostatic

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System